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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,955	09/22/2003	James Y.J. Chung	PO7946/MD02-19	1214

157 7590 12/19/2007
BAYER MATERIAL SCIENCE LLC
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PITTSBURGH, PA 15205

EXAMINER

SZEKELY, PETER A

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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12/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/667,955</p>	<p>Applicant(s)</p> <p align="center">CHUNG ET AL.</p>	
	<p>Examiner</p> <p align="center">Peter Szekely</p>	<p>Art Unit</p> <p align="center">1796</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 13-15 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Ross et al. 6,610,770, with Bixler et al. 5,178,730, Larson 6,858,665 and Masuda et al. 7,026,023 enclosed as evidence.
3. Ross et al. disclose a polymer composition comprising smectite clay modified with one or more quaternary ammonium compounds, an organic material and a polymer. The concentration of the organic material is 1-50 wt.% based on the clay (claim 1). The clay and the organic material are present in a concentration of 1-40 wt.% of the polymer (claim 2). The organic material is a carboxylic acid. The polymer is a polycarbonate (claim 4). Ross et al. do not mention the particle size of ht clay, however Bixler et al. in claim 2 show the dimensions of hectorite used by Ross et al. (see claim 8), while Larson et al. show the dimensions of montmorillonite in column 5, lines 12-18 and Masuda et al. show the show the same in Examples 1-4, proving that the particle size is inherent in the nanoclay. The impact performance is inherent in the composition. The process is nominal comprising only the mixing of the ingredients. Applicants' claims are not novel.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. 6,610,770, in view of Bixler et al. 5,178,730 or Larson 6,858,665.
6. Ross et al. further disclose montmorillonite as a representative smectite clay in column 8, lines 50-55, polycarbonate in column 5, line 28 as a polymer, dimethyl bis (hydrogenated tallow) ammonium chloride as a preferred quaternary ammonium compound in column 8, lines 35-60 and citric acid in column 9, line 16. The secondary references show typical particle sizes of smectite clays. It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to select applicants' ingredients from a list of equivalents.

Response to Arguments

7. Applicant's arguments filed 11/05/07 have been fully considered but they are not persuasive. Whether Ross et al. add the nanoclay and the acid to the polymer in order to improve the impact performance, the flame-retardance or the aroma is immaterial. Applicants are claiming a process and a product-by-process. As long the process steps and the ingredients are the same, the intended purpose is irrelevant. The Declarations allegedly proving that the carboxylic acid of Ross et al. do not intercalate the clay and do not react with the quaternary ammonium compounds do not obviate the rejections, applicants' claims do not contain any reference to intercalation by the acid or the reaction of the acid and the quaternary ammonium compounds. Ross et al. add the same compounds as applicants and necessarily the results of the two processes are the same. The addition of carboxylic acid is not optional. It is claimed, positively and not optionally in claim 3. As far as picking and choosing is concerned it is entirely proper in

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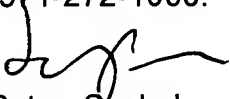
the context of an obviousness rejection. In re Arkley 172 USPQ 524, 526 (CCPA 1972). Even obvious to try is prime facie obvious as long it is trying a finite number of alternatives with identified, predictable solutions. KSR v. Teleflex, 82 USPQ2d 1385, 1395 (S. Ct. 2007). Regarding the Declaration of Mr. Chung, filed 6/15/07, comparing the effect of carboxylic acids on SAN with the effect of carboxylic acids on polycarbonate, since polycarbonate is one of the "one or more organic compounds" which can be used, the substitution of polycarbonate with SAN is not a selection between equivalents. The rejections are maintained.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Szekely whose telephone number is (571) 272-1124. The examiner can normally be reached on 6:10 a.m.-4:40 p.m. Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Peter Szekely
Primary Examiner
Art Unit 1796

P.S.
12/13/07